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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/504,816	08/17/2004	Manfred Heim	2732-139	5582

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WASHINGTON, DC 20005

EXAMINER
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BATTULA, PRADEEP CHOUDARY

ART UNIT	PAPER NUMBER
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3722

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	04/04/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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PTO-PAT-Email@rfem.com

## Office Action Summary

Application No.

10/504,816

Applicant(s)

HEIM, MANFRED

Examiner

Pradeep C. Battula

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-33 and 39-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,6-8,10-16,18-20,22-27,29-33 39-44, is/are rejected. *AB*
- 7) ☒ Claim(s) 3-5,9,17,21 and 28 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/17/04</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 2, 6 – 8, 10 – 16, 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vent (U.S. 2,388,352) in view of Phillips et al. (Phillips; U.S. 6,569,529) and Hoshino (U.S. 5,347,111) and Hudson et al. (Hudson; U.S. Pub. 2003/0161017 A1).

In regards to Claim 1, 10 – 12, 15 and 33 Vent discloses a security document, or semifinished product for producing the security document, comprising a substrate 10 with first 12 and second 13 opposing substrate surfaces (Page 1, Column 2, Lines 34 – 36) and a security element 16, 17 that is so connected with the substrate that it is visually recognizable at least from one of the two substrate surfaces (Page 1, Column 2, Lines 40 – 59).

Vent does not disclose wherein the security element includes a multilayer interference element producing a color shift effect and a layer with diffraction structures that at least partly overlaps the interference element, characterized in that the security element is semitransparent, the interference element has gaps in at least one layer, and the diffraction structures directly adjoin the interference element.

Phillips discloses a multilayer security element wherein the security element includes a multilayer interference element 100 producing a color shift effect and a layer (Column 5, Lines 25 – 27) characterized in that the security element is semitransparent (Column 17, Lines 60 – 67) and wherein the interference element layers are vapor deposited (Claim 46). Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use Phillips' interference element in place of Vent's in order to have an increased security of Vent's invention. Furthermore, Phillips discloses that the substrate 102 directly adjoins the interference element 100 (Column 14, Lines 60 – 61; Figure 10, Items 100, 102).

Vent in view of Phillips does not disclose diffraction structures that at least partly overlaps the interference element and that the interference element (I) has gaps in at least one layer.

Hoshino discloses a hologram forming layer 11a on a layer 11b with diffraction structures that at least partly overlaps the hologram forming layer 11a and actually directly adjoining the hologram. Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use the diffraction structures of Hoshino in Vent modified by Phillips in order to increase the diffraction effect of the foil layer 100 of Phillips by creating a jagged substrate 102.

Vent in view of Philips and Hoshino does not disclose the interference element has gaps in at least one layer.

Hudson discloses Hudson discloses of a diffractive device 7, such as an interference element, which has gaps (1 – 4) created by laser vaporization (Paragraph

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0064, Lines 1 – 12; Figure 1, Items 1 – 4, 7). Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to enable profiling of a surface for additional optical or tactile effects (Paragraph 0064, Lines 25 – 27). Furthermore the examiner considers a sign, encoding or pattern to fall in the categories of optical and tactile effects. Hudson also discloses diffractive structures on a substrate (Paragraph 0053).

In regards to Claim 2, as applied to Claim 1, Vent modified by Phillips, Hoshino, and Hudson further discloses wherein the security element 16, 17 is applied to one of the two substrate surfaces and spans a hole 14, 15 or a transparent area in the substrate (Page 1, Column 2, Lines 34 – 36; Figure 3, Items 14 – 17).

In regards to Claim 6, as applied to Claim 1, Vent modified by Phillips, Hoshino, and Hudson further discloses wherein the interference element 110 is present on a transparent substrate (Column 18, Lines 17 – 26; Phillips) and a plastic substrate (Column 17, Lines 40 – 43; Phillips). Therefore it would have been obvious to a person having ordinary skill in the art to use a transparent substrate because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

In regards to Claim 7, as applied to Claim 6, Vent modified by Phillips, Hoshino, and Hudson further discloses wherein the plastic substrate is colored (Column 17, Lines 40 – 43; inherent since not disclosed as transparent plastic; Phillips).

In regards to Claim 8, as applied to Claim 1, Vent modified by Phillips, Hoshino, and Hudson further discloses wherein the interference element 100 includes a first

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absorber layer 108, a dielectric layer 106 adjoining and overlying the first absorber layer and a second absorber layer 104 adjoining and overlying the dielectric layer (Column 17, Lines 60 – 65; Figure 10, Items 104, 106, 108; Phillips).

In regards to Claim 13, as applied to Claim 1, Vent modified by Phillips, Hudson, and Hoshino further discloses wherein the diffraction structures are present in a separate layer (Column 3, Lines 39 – 51; Figure 4, Items 11b, 12; Hoshino).

In regards to Claim 14, as applied to Claim 1, Vent modified by Phillips, Hudson, and Hoshino further discloses wherein the diffraction structures include an embossed relief pattern (Paragraph 0053; Hudson).

In regards to Claim 16, as applied to Claim 1, Vent discloses a security document, or semifinished product for producing the security document, comprising a substrate 10 with first 12 and second 13 opposing substrate surfaces (Page 1, Column 2, Lines 34 – 36) and a security element 16, 17 that is so connected with the substrate that it is visually recognizable in an opened state from both sides of the document because of an aperture 14 or 15 (Column 2, Lines 34 – 36). Therefore the element modified by Phillips, Hoshino and Hudson, placed on Vent's invention, can be seen through both surfaces, because of the apertures, of Vent's invention depending on the way of viewing the security element.

2. Claims 18 – 20, 22 – 26, 29 – 32, and 39 – 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hudson in view of Phillips and Hoshino.

In regards to Claim 18, 22, 23 Hudson discloses security element to be embedded in or applied to a security document having a diffraction structure 7 having

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gaps (1 – 4) created by laser vaporization (Paragraph 0064, Lines 1 – 12; Figure 1, Items 1 – 4, 7) for enabling profiling of a surface for additional optical or tactile effects (Paragraph 0064, Lines 25 – 27). Furthermore the examiner considers a sign, encoding or pattern to fall in the categories of optical and tactile effects. Hudson further discloses diffractive structures on a substrate (Paragraph 0053).

Hudson does not disclose wherein the security element includes a multilayer interference element producing a color shift effect and a layer with diffraction structures that at least partly overlaps the interference element, characterized in that the security element is semitransparent and the diffraction structures directly adjoin the interference element.

Phillips discloses a multilayer security element wherein the security element includes a multilayer interference element 100 producing a color shift effect and a layer (Column 5, Lines 25 – 27) characterized in that the security element is semitransparent (Column 17, Lines 60 – 67). Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use Phillips' interference element in place of Hudson's in order to have an increased security of Hudson's invention. Furthermore, Phillips discloses that the substrate 102 directly adjoins the interference element 100 (Column 14, Lines 60 – 61; Figure 10, Items 100, 102).

Hudson modified by Phillips does not disclose the diffraction structures directly adjoin the interference element.

Hoshino discloses a hologram forming layer 11a on a layer 11b with diffraction structures that at least partly overlaps the hologram forming layer 11a and actually

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directly adjoining the hologram. Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use the diffraction structures of Hoshino in Hudson modified by Phillips in order to increase the diffraction effect of the foil layer 100 of Phillips by creating a jagged substrate 102.

In regards to Claim 19 and 24, as applied to Claim 18, Hudson modified by Phillips and Hoshino further discloses wherein the interference element 110 is present on a transparent substrate (Column 18, Lines 17 – 26; Phillips) and a plastic substrate (Column 17, Lines 40 – 43; Phillips). Therefore it would have been obvious to a person having ordinary skill in the art to use a transparent substrate because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

In regards to Claim 20, as applied to Claim 18 Hudson modified by Phillips and Hoshino further discloses wherein the interference element 100 includes a first absorber layer 108, a dielectric layer 106 adjoining and overlying the first absorber layer and a second absorber layer 104 adjoining and overlying the dielectric layer (Column 17, Lines 60 – 65; Figure 10, Items 104, 106, 108; Phillips).

In regards to Claim 24, as applied to Claim 18, Hudson modified by Phillips and Hoshino further discloses wherein the diffraction structures are present in a separate layer (Column 3, Lines 39 – 51; Figure 4, Items 11b, 12; Hoshino).

In regards to Claim 25, as applied to Claim 18, Hudson modified by Phillips and Hoshino further discloses wherein the diffraction structures include an embossed relief pattern (Paragraph 0053; Hudson).



In regards to Claims 29 and 30, as applied to Claim 18, Hudson modified by Phillips and Hoshino further discloses an Interference element 110 with a release layer and carrier web (Figure 12). Therefore it would have been obvious to use Item 100 in place of item 110 because it is well known that a release layer and web are generally used in transfer materials where the item to be transferred has it's own substrate, as shown with item 102 (Figure 10).

In regards to Claim 31 and 41 – 44, Hudson discloses transfer material for applying a security element to a document of value, wherein the transfer material includes the following layer structure of a diffraction structure 7 having gaps (1 – 4) (Paragraph 0064, Lines 1 – 12; Figure 1, Items 1 – 4, 7). Furthermore, Hudson discloses that the laser creating the gaps can be adjusted so that it may only vaporize one or multiple layers (Paragraph 0064, Lines 9 – 25).

Hudson does not disclose a multilayer interference element with a color shift effect, and a layer with diffraction structures that at least partly overlaps the interference element, characterized in that the security element is semitransparent, and the diffraction structures directly adjoin the interference element.

Phillips discloses a multilayer security element wherein the security element includes a multilayer interference element 100 producing a color shift effect and a layer (Column 5, Lines 25 – 27) characterized in that the security element is semitransparent (Column 17, Lines 60 – 67) wherein the interference element layers are vapor deposited (Claim 46). Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use Phillips' interference element in place

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of Hudson's in order to have an increased security of Hudson's invention. Furthermore, Phillips discloses that the substrate 102 directly adjoins the interference element 100 (Column 14, Lines 60 – 61; Figure 10, Items 100, 102).

Hudson modified by Phillips does not disclose the diffraction structures directly adjoin the interference element.

Hoshino discloses a hologram forming layer 11a on a layer 11b with diffraction structures that at least partly overlaps the hologram forming layer 11a and actually directly adjoining the hologram. Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use the diffraction structures of Hoshino in Hudson modified by Phillips in order to increase the diffraction effect of the foil layer 100 of Phillips by creating a jagged substrate 102.

In regards to Claim 32, as applied to the structure presented in Claim 31, Hudson in view of Phillips and Hoshino does not disclose the material is to be transferred. Phillips, However, discloses an Interference element 110 with a release layer and carrier web (Figure 12). Therefore it would have been obvious to use Item 100 in place of item 110 because it is well known that a release layer and web are generally used in transfer materials where the item to be transferred has it's own substrate, as shown with item 102 (Figure 10).

In regards to Claims 39 and 40, Hudson in view of Phillips and Hoshino inherently disclose that the item can be used on an item of paper value or a bank note because the device is used for security and anti-counterfeit applications and the two

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previous items have had various security and anti-counterfeit devices used in conjunction.

3. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hudson, in view of Phillips, Hoshino, and Vent.

In regards to Claim 27, Hudson modified by Phillips and Hoshino does not disclose that the element can be seen from both sides of the element.

Vent discloses a security document, or semifinished product for producing the security document, comprising a substrate 10 with first 12 and second 13 opposing substrate surfaces (Page 1, Column 2, Lines 34 – 36) and a security element 16, 17 that is so connected with the substrate that it is visually recognizable in an opened state from both sides of the document because of an aperture 14 or 15 (Column 2, Lines 34 – 36). Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use the interference element of Phillips, Hudson and Hoshino in place of Vent's in order to have an increased security of Vent's invention.

***Allowable Subject Matter***

Claims 3 – 5, 9, 17, 21, and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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**Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pradeep C. Battula whose telephone number is 571-272-2142. The examiner can normally be reached on Monday - Thursday 7:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Monica S. Carter can be reached on 571-272-4475. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PCB  
Patent Examiner  
March 22, 2007

  
MONICA CARTER  
SUPERVISORY PATENT EXAMINER